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ABSTRACT

This paper reports on an innovative approach to the teaching of reading. The thrust of the approach lies in application of findings from Meeker's research which since 1963 had identified certain clusters of Guilford's Structure of Intellect and intellectual abilities found to be necessary in the process of learning to read. Several programs are cited in which teaching the intellectual abilities to children who could not previously read has produced excellent results. The premise that intellectual abilities are prerequisite to learning to read seems well founded, but learning to read does not appear to be a function of a global mental age maturity but depends on various abilities not all of which children have experienced. It is concluded that when the lack of specific intellectual skills is causative in reading failure, then those skills can and should be taught using a method which identifies, diagnoses, and remediates intellectual abilities in children who have not learned to read with traditional methods. (Author/TS)

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TEACH INTELLECTUAL ABILITIES: A FUNDAMENTAL AND INNOVATIVE APPROACH TO TEACHING READING

abstract

This paper reports on an innovative approach to the teaching of reading. The thrust of the approach lies in application of findings from Meeker's research which since 1963 has identified certain clusters of Guilford's Structure of Intellect intellectual abilities found to be necessary in the process of learning to read.

Several programs are cited where teaching the intellectual abilities to children (average, below average and gifted) who could not previously read has produced excellent results. .The premise that it takes intellectual abilities as a prerequisite to learning to read seems well founded--that learning to read is not a function of a global mental age maturity but depends on various abilities not all of which children have experienced.

Bibliography: A PARADIGM FOR SPECIAL EDUCATION, in State of the Arts, Bureau of Handicapped Children, Washington, D.C., chapter by Mary Meeker, 1975.

THE STRUCTURE OF INTELLECT: ITS USES AND INTERPRETATIONS. M. Meeker, Chas. Merrill, Columbus, Ohio.

RESULTS AND CONCLUSIONS: Using a method which identifies, diagnoses and remediates intellectual abilities in children who have not learned to read with traditional methods, the author concludes that when the lack of specific intellectual skills is causative in reading failure, then those skills can and should be taught.

CS 002 587

TEACH INTELLECTUAL ABILITIES:
A FUNDAMENTAL APPROACH TO TEACHING READING

Mary Meeker, Ed.D.

What do you do when a child cannot learn to read or what do you do when a child will not read? Educationally, this is the major problem facing teachers.

There are many methods of teaching reading and we know all of them are successful on some children. So we must conclude that the reason some children do not read lies within the individual child himself and not with the methods used, although, generally certain methods are better for certain children. Chall's findings do not preclude success necessarily. That is, Chall learned that more intelligent children did better if taught by sight and whole words whereas average or less intelligent and less experienced children did better with the notation and phonetic approaches.

Even so, the reasons for success in the differing methodologies again lies within the child himself. We will begin by ruling out inherent visual or auditory Area III problems.

And, of course, it is that knowledge which is the least familiar to most teachers. Teachers are taught to learn well the method available to them, but that is the Ivory Tower Approach to reading. As an approach, it sits back and says--we can teach phonics or teach language experiences or use a linguistic approach and so on--as though the receiver (the child) is but there a sponge, a tabula rosa, which will when instructed, learn, whatever the popular college training preferred method happens to be.

So programs such as Sullivan, Distar, Phomula Phonics, etc., work very well to a point, but do not lead the child into reading comprehension (communication) skills. Remedial reading experts on the other hand, are expert in reading diagnostic tests--but they are diagnosing the components of reading as presented to the child as though all are alike and since we have asked how much (MA6) (not what kind) and so long as we do this, ask how much I.Q. score not what kind we are going to lower our rates of success. We need a paradigm (model) for diagnostics and prescription.

Some of the most important psychological research of the past can be applied to the teaching of processes required in learning to read. Guilford's model of 96 identified intellectual products is analogous to the chemical chart of elements, whereas Piaget has charted developmental sequences and processes involved in cognitive formations. Reading experts are not generally trained in psychological theory and thus the application of psychological findings are often left to those who work in school psychology. The purpose of this paper is to acquaint reading specialists with a psychological approach which has been very successful when reading problems are due to the child's deficiency not in an I.Q. score but in those intellectual abilities as defined by Guilford's Structure of Intellect (S.I.) and applied by Meeker (SOI).

Educational psychologists have been and are still contributing specific findings to support the general proposition that the full range of cognitive skills develop predictably in the process of intellectual maturation, just as do motor and social skills. We are at the same time, finding that clusters of specific intellectual

abilities are fundamental to the learning of certain academic skills. It has taken 13 years to identify those abilities and field test the findings. But it was necessary to identify and field test the teaching of these abilities if we were ever to remove one of the most entrenched informal assumptions that colors educators' decisions. That assumption is that an I.Q. score stands for intelligence. The global I.Q. score is only a number and does not really stand for intelligence. There are identifiable capabilities that children, at any given age, may not have at all even though their I.Q. scores are average or above. However, the curriculum is presented to children as though they have the ability to do the learning if he 1) is of a certain age, (M.A. 6.0), or 2) has no identifiable visual or auditory/neurological involvements.

As with many such "discoveries", when simply stated, it seems altogether too obvious when we say that it takes intelligence to learn. The learning experience we traditionally provide for children often is composed of scaled down adult expectancies in curriculum instead of experiences which develop those intellectual abilities that are necessary components for the learning of skills in expected achievement.

Yet, it has long been the acknowledged purpose of educational systems to instill in children those kinds of knowledge which are deemed important by the supporting culture, the primary knowledge of which is pervasively based on reading. Each system or district, going along in this way, (even those which have employed learning analysts and the latest in teaching machines and programmed learning instruction), has found itself serving perhaps 60, maybe 80,

percent of its population adequately (depending on the socio-economic level of the population) and each of these systems has been faced with the undeniable fact that a large group of children neither learn nor integrate knowledge, and that many of them not only hate school but look upon it as an institutional enemy.

Each district, each state has thus been forced to take a first step in the solution of learning-failure problems, and has placed impaired children (neurologically handicapped, physiologically handicapped, mentally retarded, deaf, blind and partial seeing, and now the emotionally and educationally handicapped) into special categories and classes.

In these special classes, teachers have been forced to retain as objectives and goals the same traditional curriculum of the specific district to teach scaled down versions to these children. Certain techniques or methodologies have been employed differentially, but rarely has the curriculum itself been changed. It is commonplace to lump less severe learning problem children together as "reading problems" and remedial measures are then taken, still without diagnosing whether the child has the necessary intellectual skills to learn the subject matter, nor is the curriculum changed to include the teaching of the intellectual abilities required for learning.

Many of such ensuing problems may be traced to the fact that the general educational curriculum has never been based on, or oriented within, a theory of human intellectual functioning. And so when a child is in educational trouble, the typical current enlightened procedure is first to pull him out for a specific testing, part of which may be an I.Q. test. (And in this instance,

reading specialists can teach school psychologists important facts about testing. Reading specialists test the many components of reading and then on the basis of their findings proceed to teach or train those components found to be lacking or low; for the act of reading is composed of many skills.)

In the case of the intelligence test, school personnel have settled for a numerical score as though it is intelligence.

In 1962 (Meeker, 1963) the first analyses of the Binet, WISC, Slosson, Hiskey Tests were made so that, at least, the I.Q. test was rooted in a theory of intelligence in an attempt to do more than report a conglomeration of test items as a single score.

And like the chart of elements, a profile then could be made for each child tested. The resultant profile (see fig. 1) indicated what strengths and weaknesses were identifiable as measured in the test.

Figure 1 here

The psychologist then, as the reading specialist has always done, was able to identify specific intellectual strengths and weaknesses and then could prescribe specific intellectual training which was truly individualized. The importance of basing an I.Q. test on theory lies in the use of the information for predictability and in getting rid of the almighty score.

And then came questions like this: If we can identify intellectual abilities, can we train them? The answer is "yes". What is their relationship to the learning of subject matter?

The ensuing research since 1962 generated by Meeker's fundamental approach is long and covers many areas, but one of the

most important and interesting relationships is the one existing between learning of reading and intellectual abilities.

A brief historical tracing gives us these findings:

Visual memory is heavily involved as a necessary intellectual skill for learning to spell, to read, to learn English subject matter (MFU) (Meeker, 1966). Visual memory and Auditory memory must be taught separately.

See figure 1 to identify where MFU-V and A is located among the 120 abilities predicted by the structure of intellect. Tasks which train this ability are found in the SOI Abilities Workbook-Memory (Meeker and Shadduck, 1973). So SI abilities exist in children? What abilities underlie subject matter?

Abilities as defined by Guilford's SI model for adult intelligence do also exist in young normal, retarded and gifted children. (Ball, Meyers, Meeker, Orpet, etc.)

The lack of certain SOI (SOI is the application of the SI abilities to children) abilities is variously, predictably reflected in learning problems.

Acting out, negative, pre-delinquent behavior is often associated with lack of Evaluation Intelligence (Williams, 1967, and Bear, 1969).*

SOI abilities do change with age. This depends on mother's attitude and child's exposure (Ball, 1969; Millichamp, 1973).

Certain SOI abilities are necessary for learning certain subjects. For arithmetic he needs auditory memory for units and systems (MSU, MSS-A) (Meeker, 1966; Feldman, 1970), for English

*Please look at SOI profile, fig. 1, to identify abilities quoted here.

and spelling, visual memory (MFU, MSU-V) (Meeker), for the processes involved in reading, he needs:

(CFU-V) Cognition of Figural Units-Visual

(CFU-A) Cognition of Figural Units-Auditory

(Identified for the first time at the six year level)

(MFU-V) Memory of Figural Units-Visual

(MFU-A) Memory of Figural Units-Auditory

(EFU-V) Evaluation of Figural Units-Visual

(EFU-A) Evaluation of Figural Units-Auditory

(CMU) Cognition of Semantic Units (Feldman 1970)*

(A complete list of studies in education on the application of Guilford's theory is available at cost from the SOI Institute, 214 Main, El Segundo, California 90245.)

There have been several Title III Projects which put into effect some of the above findings. The first of these was Dr. Norman Pear's 2-year project in Mojave - California City School District. In that study, all children in the first, second and third grades of three schools (one experimental; two controls) were first tested on the WISC (SOI profiles were made for each) and on the Stanford Reading Test. Both groups received the best known reading programs and resources from reading specialists-teachers. The experimental group received additional programming (as found to be needed in intellectual profiles) three times a week using SOI Abilities Tasks. The control group received comparable time in additional reading laboratory and SRA materials. At the end of each year they were retested in reading and WISC's and a funny thing happened. Not

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*Please look at SOI profile, fig. 1, to identify abilities quoted here.

only did the experimental group read better, but they also achieved higher I.Q. scores. In other words, their intelligence increased as did their reading.

Anotner first grade study was conducted by Judy Hess in Glendora, California Schools. In her experimental groups, the children received training in those intellectual skills that underlie learning to read but had no specific reading curriculum. The controls got the best of the traditional reading program. After one year on a retest of the California Basic Reading Skills Test, the experimentees made higher reading scores, significant at the .05 level. That study led to a three-year SOI Project funded under Title III (still in progress) where the students are given specific training in intellectual skills as part of the total school program. (Judy Hess, Glendora Unified Schools, Glendora, California.) Similar gains have been made on gifted non-readers in Clayton, Missouri and in Lompoc, California where teachers put the SOI into the classroom.

These studies are, of course, on the cutting edge of exploration, and since reading is the most complex component of curriculum, reading specialists may be interested in what has been happening since 1962 in educational and school psychology.

How intellectual abilities come into being, no one knows definitely, nor do we know when these abilities come into being. We do not know whether children are "born" with such abilities or not. We do know that environmental stimulation can develop or suppress these abilities. (Piaget)

It has been suggested by Chall that emotional problems are integrally meshed with symptomatic reading problems. It has been

suggested that perceptual (neurological) problems also underlie reading failure (Frostig). I think it is time to consider that the lack of certain intellectual skills, regardless of I.Q. score, are equally implicated and that no diagnostic work upon any child failing reading should fail to account for, diagnose and remediate:

1. Social-emotional-environmental factors
2. Physiological-neurological factors
3. Intellectual factors as identified by an SOI analysis of a Binet, WISC, DTLA, etc.

We find that children who have good I.Q. scores but who are not learning to read, very often have SOI profiles which show weaknesses or total failure in Memory and Units items. In our educational therapy clinic at the SOI INSTITUTE and at Loyola Marymount University, Los Angeles, school psychologists learn to begin the remediation of reading by training the child's individual intellectual weaknesses long before he is given traditional remedial reading or machine therapy.

It is a successful approach and gains occur quickly when diagnosis is reflected in the therapy.

Any reading specialist who knows a child has had an individual I.Q. test can request an SOI Profile or learn to make one and begin remediating those intellectual abilities which are the foundational abilities for learning to read.

Here is a profile of a typical reading problem (Figure 2). Each minus means the child missed the item which tested that kind of ability. In Figure 3 is an example of one task which trains that ability. So a student may be put on a specific program composed of many tasks which are keyed to his weak abilities

and strong ones (plusses). A 20 minute period three times a week has proven very effective when analyses of Intelligence tests indicate the cause of failure to read is due to lack of intellectual abilities required for reading. The task in Figures 3a and 3b are keyed to the child's profile. Look in the upper right hand corner where it ways MFI-5. Look in Figure 2 where Memory Abilities are shown in the upper left hand corner. At the top of each of the three columns is a word stating what kind of material the child can or cannot remember. The Symbolic column is full of minuses. In general the child had very poor memory and this is holding her back in achieving even though her I.Q. score is 126. This child was a typical reading problem and had been in remedial reading for two years with no progress. In three months with SOI tasks (there are over 1,000 in the SOI Workbooks to choose from) her teacher was able to take her back into her regular grade.

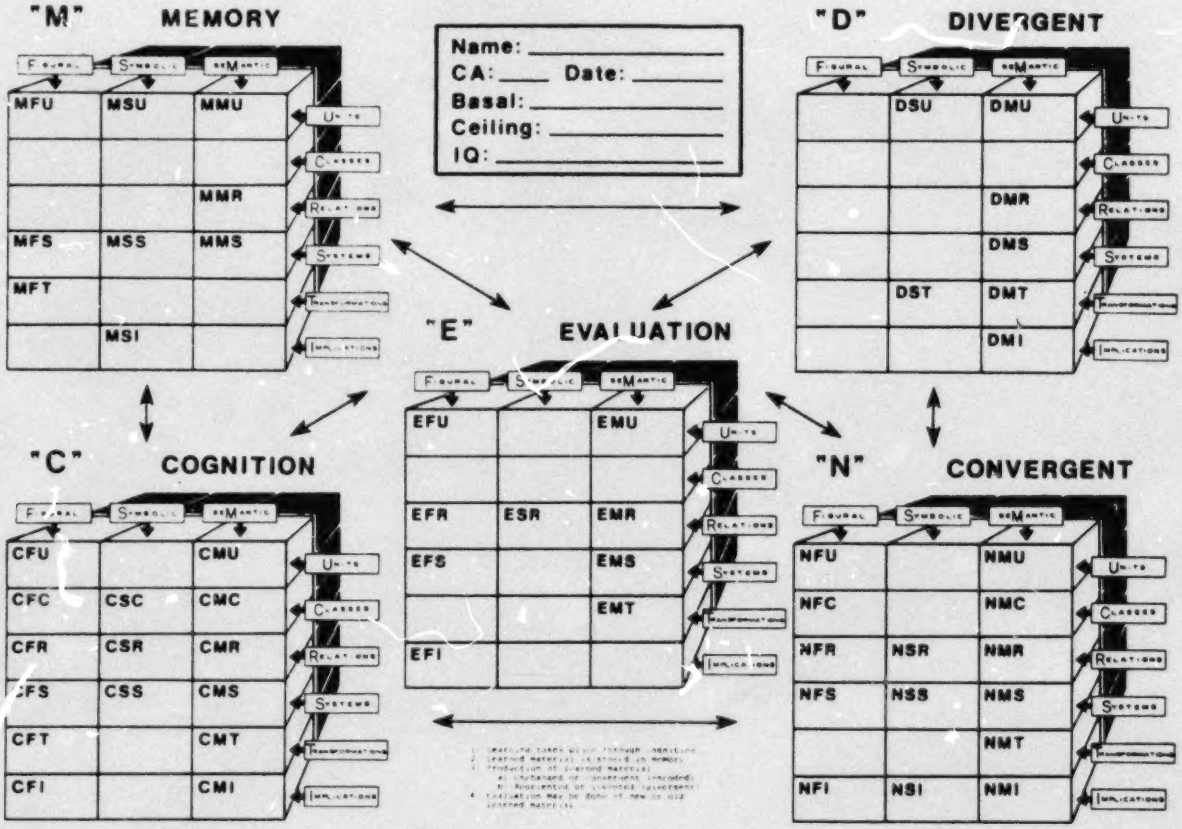
This is not an isolated case. It does point out the need for excellent diagnosis to ascertain whether the child is not reading because of poor habits, poor reading skills, poor intellectual abilities underlying reading, emotional or perceptual problems.

Mr. Jerry Coker, principal of Patterson Road School, Orcutt, California made an administrative decision and with the full cooperation of a staff who had SOI training and believed in the method recently put into effect SOI plus The Integrated Learning System of Teaching Reading in his school. At the end of one year when tested on the California state tests of achievement, the students in his school with an average group I.Q. score of

102 scored at the 95th percentile in reading.

We have always said that reading was complicated. It is. Reading is a higher level cognitive skill. We cannot continue to approach the remediation of reading problems with a simplistic breakdown of reading components. We must look to the underlying intellectual abilities which are necessary for the complicated act and we must identify them and train them.

Profile and Tally Sheet for S.O.I. Analysis of the BINET (LM) REVISED



Profile and Tally Sheet for S.O.I. analysis of the WISC-R

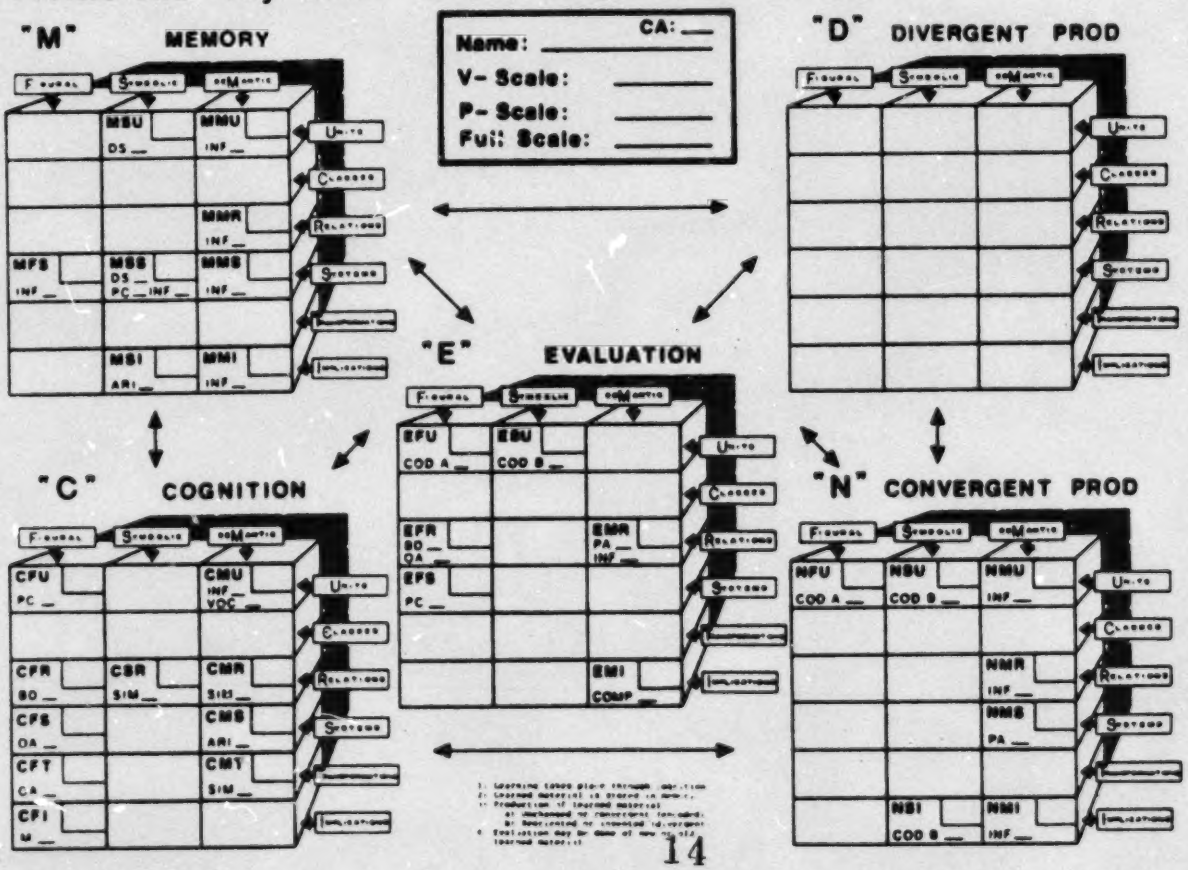


Fig. 1 Contrasting Clinical and WISC-R Profiles

REFERENCES

Ball, R., and L. Stott. Factor Analyses of Infant Mental Scales. Merrill Palmer Publications, 1964.

Bear, Joyce. "A developmental approach to cognitive processes of adolescents." Unpublished thesis, Wayne State University, 1971.

Feldman, B. "Deficit skills of children who do not learn to read." Unpublished doctoral dissertation, University of Southern California, 1971.

Meeker, M.* "The NSWP behavior samplings in the Binet." Paper presented at the American Psychological Association, Philadelphia, 1963.

Meeker, M., and Meyers, C.E., "Memory Factors and School Success of Average and Special Groups of Ninth-Grade Boys", Genetic Psychology Monographs, 1971, 83, 275-308.

Meeker, M., and Shadduck, Dennis. SOI Abilities Workbooks (5). Ed., SOI Institute, El Segundo, California.

Meyers, C.E., H.F. Dingman, and R.E. Orpet. "Four ability factor hypotheses at three preliterate levels in normal and retarded children." Monograph of the Society for Research in Child Development, 1964, 29, 5.

Millichamp, Dore. "A Longitutinal Study of SOI Factors in Four to Eight Year Olds" in press, Brore Center, Toronto, Canada.

Orpet, R.E., and C.E. Meyers. "Six Structure-of-Intellect hypotheses in six-year-old children." Journal of Educational Psychology, 1966, 57, 341-346.

Williams, M. "Kindergarten Boys." Unpublished master's thesis, University of Southern California, 1969.

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*Published in Genetic Psychology Monographs, 1971, 83, pp. 275-308.